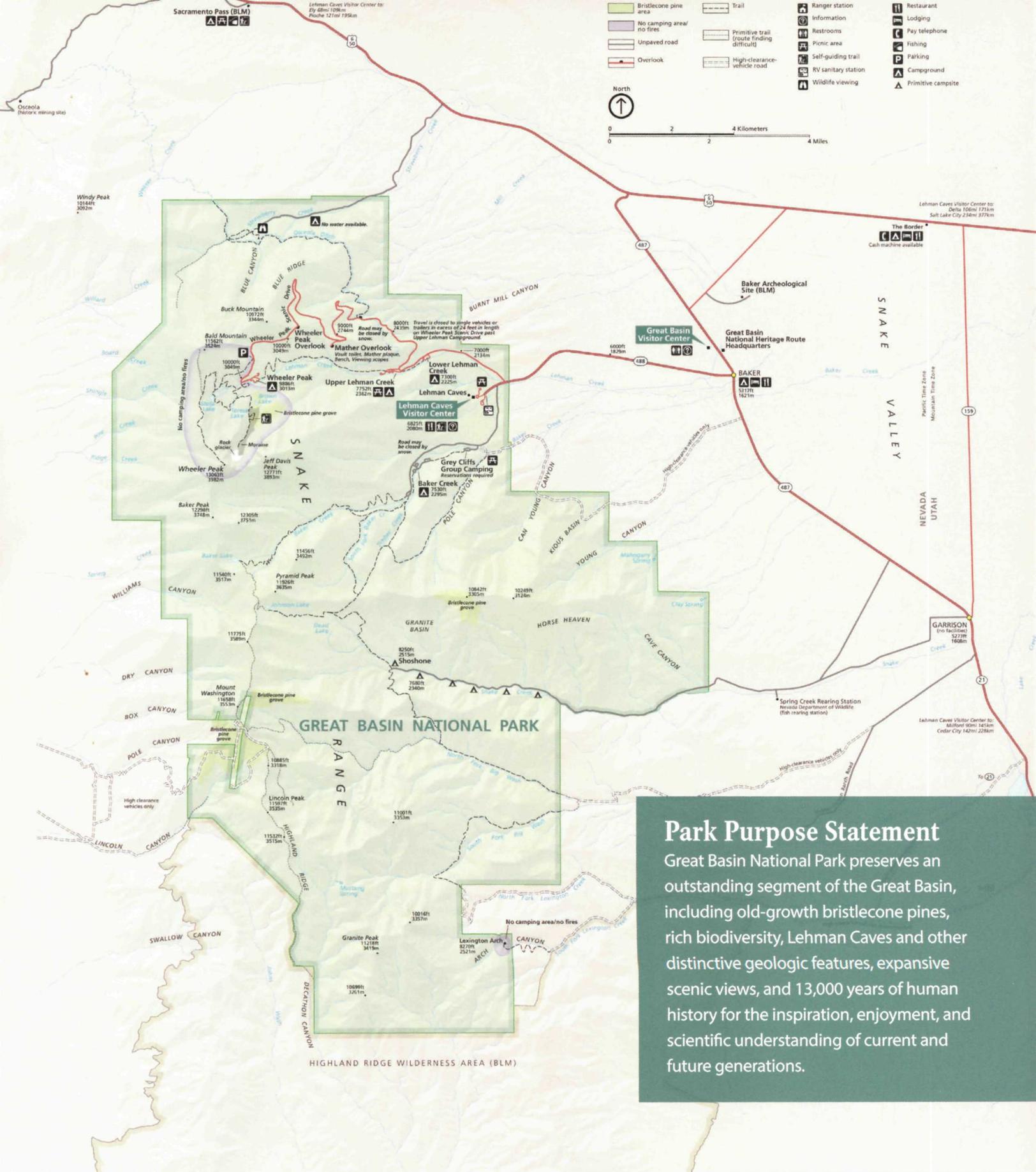


Great Basin National Park Year in Review

National Park Service
U.S. Department of the Interior

Great Basin National Park
Baker, NV





Park Purpose Statement
 Great Basin National Park preserves an outstanding segment of the Great Basin, including old-growth bristlecone pines, rich biodiversity, Lehman Caves and other distinctive geologic features, expansive scenic views, and 13,000 years of human history for the inspiration, enjoyment, and scientific understanding of current and future generations.

ON THE COVER: Park staff and volunteers measured alpine plant species composition, diversity, density and percent cover on Buck, Bald, Wheeler, and Pyramid Peaks from July 19-23, 2018 to study changes to alpine environments in response to climate change during the GLORIA survey. NPS PHOTO/MEG HORNER

Restoring a Wetland

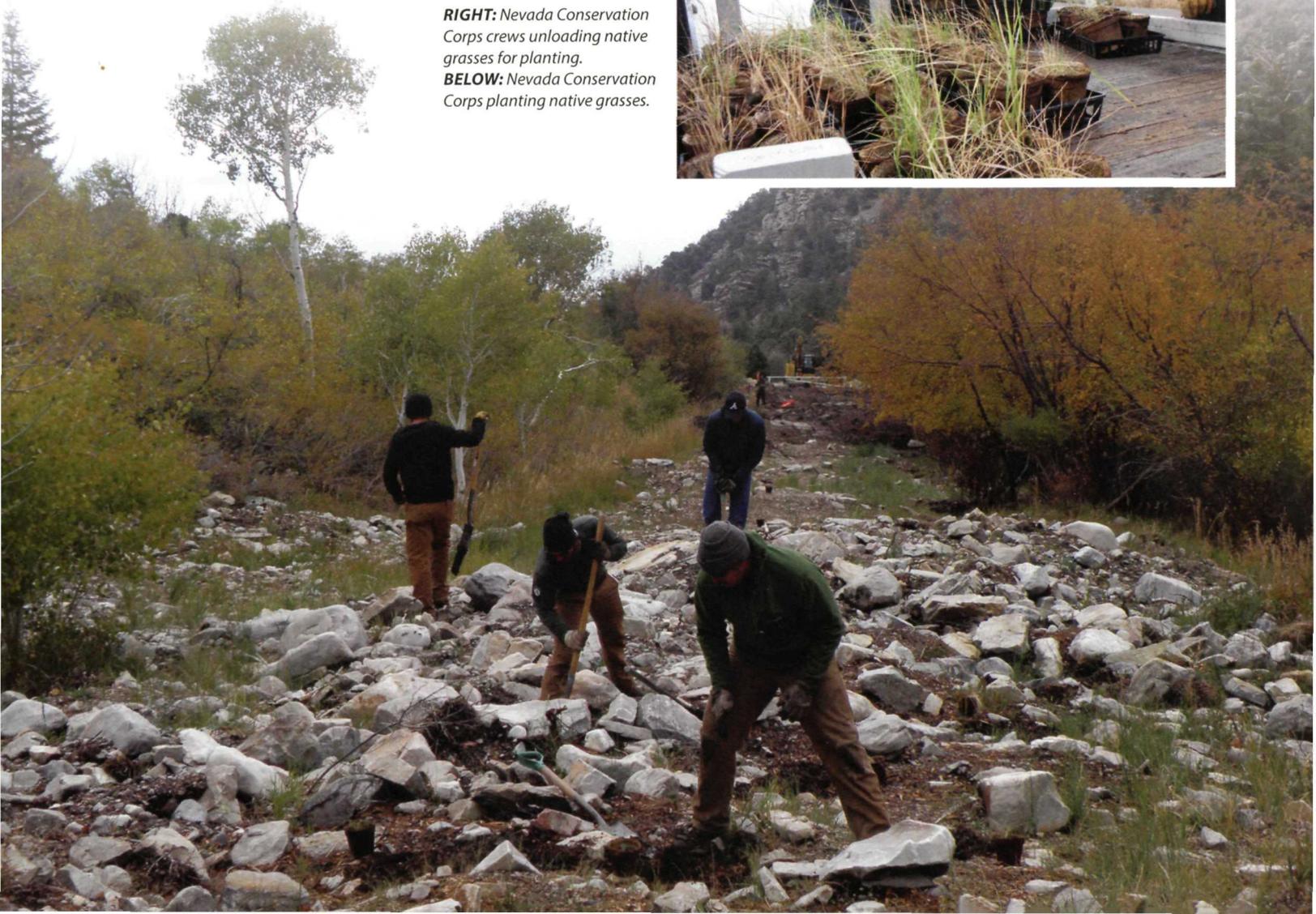
Upper Lehman Campground was developed in the 1960s by the U.S. Forest Service. The northern campground access road was constructed through a wetland complex consisting of springs, seeps, wet meadows, and a braided riparian stream system. To redirect water from both the road and nearby campsites, ditches were constructed to drain wet areas and channel water through five culverts. Wetland function was eliminated or degraded and native vegetation was reduced. Wetlands and riparian habitat are extremely limited within the park and are a highly valued ecological system.

The campground was reconstructed in 2015 with the Southern Nevada Public Lands Management Act (SNPLMA) funds. Resource staff worked with the design team to eliminate the need for the northern access road. Thus the opportunity to restore the wetland complex began.

The project goals are to remove the road, restore one-half mile of riparian stream habitat, and eight acres of wetland habitat. The park has completed the first three years for this four-year project. To date, all asphalt and road base have been removed; the site has been recontoured; five culverts have been removed; ditches have been filled; all springs, seeps, and tributaries have been returned to their natural channels; pools were created within the three palustrine (no flowing water) ecosystem types; invasive plants have been removed; and native plant species have been seeded and planted.

RIGHT: Nevada Conservation Corps crews unloading native grasses for planting.

BELOW: Nevada Conservation Corps planting native grasses.





Park staff treating invasive thistles.

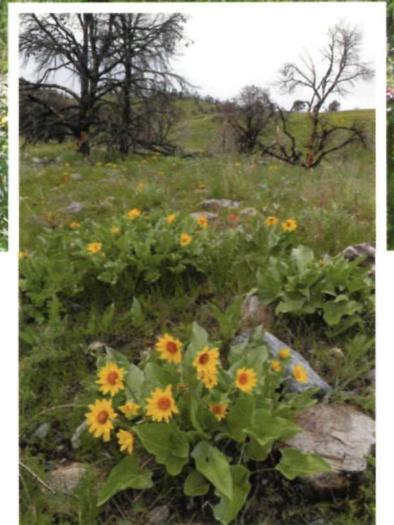
Strawberry Burned Area Recovery (BAR)

The Strawberry Fire started on Monday, August 8, 2016, and quickly grew but was declared controlled on August 23, 2016. Approximately 4,656 acres burned within the park. The fire burned both sides of the Strawberry Creek drainage. This is a popular recreation area with visitor amenities including a campground, picnic area, comfort station, fishing stream, and hiking trails. The area has been closed for two years while park crews and others work to restore the vegetation in the canyon.

This year a second aerial seeding of 1,194 acres was completed on March 13, 2018 with support from the Nevada Department of Wildlife (NDOW) and Bureau of Land Management (BLM). Over 6,000 pounds of bulk

seed were mixed for the park by the BLM's regional seed warehouse in Ely, NV. Native grasses, wildflowers, and shrub species were in the seed mix. One thousand ponderosa pine seedlings were purchased and planted on 15 acres.

Significant time was spent on invasive plant management. Over 450 acres were inventoried, treated, monitored, and retreated as necessary. Park crews completed surveys and treatments with help from the Lake Mead Exotic Plant Management Teams. Check your shoes, clothes and vehicle tires and undercarriage before heading into a burned area. You don't want to spread exotic seeds.



TOP: Native plants recolonizing after fire.

BOTTOM: Aerial seeding after the Strawberry Fire.

High Elevation Archaeological Survey

High elevation areas provided unique resources for foragers, hunters, and travelers in the Great Basin over thousands of years. Archaeology crews explored the upper reaches of the park over the past two summers identifying cultural site locations. The sites range from stacked stone hunting blinds on ridges above tree lines, to residential gathering camps near springs and lakes. Petroglyph sites in the park were found at some of the highest elevations, with images of the Archaic style carved in stone from 10,000 to 2,000 years ago. Time-sensitive artifacts of pottery and arrow points show that the horticultural Fremont people living in village sites in the valley were also foraging high in the mountains for hunting. Grinding and milling stones found at sites over 10,000 feet

elevation indicate the Fremont and Shoshonean people were collecting and processing plant material or possibly processing meat for drying.

This reconnaissance survey is the first step in understanding changing resources and use patterns over the thousands of years people have been in the area. Archaeological research in other ranges of the Great Basin have identified pit house villages. Residue analysis of milling stones, pottery, and spear points refine the picture of adaptation for changing climate and resources. The Great Basin National Park high elevation survey will add to the growing knowledge base of resilience in responding to challenging environments.

Park Water Systems

Many component parts of the water systems that serve Lehman Caves Visitor Center and Picnic Area, the employee housing area, as well as the Maintenance and Law Enforcement Headquarters, are dated and have experienced the attendant problems of their age: Water mains crack and leak; tanks become rusted; chlorinators get clogged and worn. Maintenance crews have addressed each of these issues and more throughout 2018.

They managed a project to drain and repaint two 50,000-gallon water tanks in order to prolong the tanks' longevity and provide cleaner storage. They had all campground water tanks drained and cleaned, and replaced all chlorinators in the seasonal water systems with new electric chlorinators powered via solar panels and battery backup. Pipe leaks both large and small were located and repaired to ensure that the Park's water supply was able to provide for the public and the employees of Great Basin.

Search and Rescue

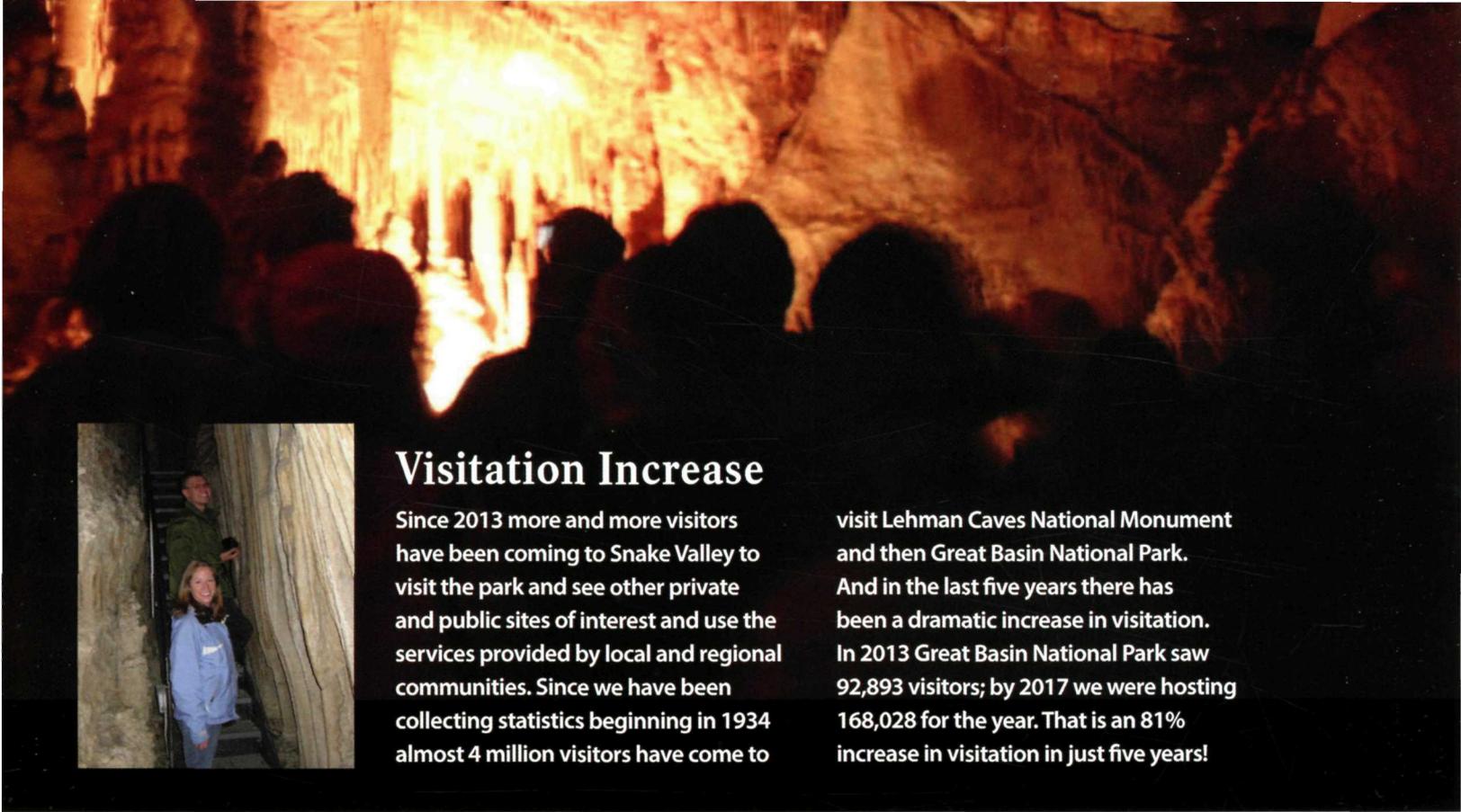
In the past few months, Great Basin has been busy with emergency operations. Twice, while hiking the Bristlecone Pine Trail, hikers lost their footing, resulting in falling injuries where they were in need of extrication. A dedicated team of responders from all divisions within the park, as well as White Pine County Fire and EMS, assisted in the litter carry out of the injured hikers. One injured party was ground transported to Delta Community Hospital, with the other being evacuated by air medevac. Both parties are expected to have a full recovery. Additionally, this year the Great Basin National Park Foundation also donated several hundred dollars in cave rescue equipment to the park to replace outdated and old worn equipment.

Johnson Lake Mine Historic District Stabilization Project Completed

The Johnson Lake Mine Historic District SNPLMA project was completed in October 2017 and closeout documentation submitted in early spring. This successful completion was a culmination of all park divisions and partners working together over the last five years. The project successfully stabilized the six historic log structures working with cooperating partners Historiccorps® preservation specialists. Nevada Conservation Corps crews' youth members learned historic preservation techniques for log cabins in remote locations. Network fire crews cut trees to reduce fire danger and provide material for replacing logs in the cabins. Archaeology crews documented site features and over 10,000 artifacts including haul trails and features that were not previously known. The trails to the site were improved. Completing the final site work, trail and archaeology crews installed wayside signs at the mill site and residential area near the lake and mine.



Our preservation partners from Historiccorps® teach the Youth Conservation Corps members how to use traditional tools to repair log buildings at the Johnson Lake Mine Historic District.



Visitation Increase

Since 2013 more and more visitors have been coming to Snake Valley to visit the park and see other private and public sites of interest and use the services provided by local and regional communities. Since we have been collecting statistics beginning in 1934 almost 4 million visitors have come to

visit Lehman Caves National Monument and then Great Basin National Park. And in the last five years there has been a dramatic increase in visitation. In 2013 Great Basin National Park saw 92,893 visitors; by 2017 we were hosting 168,028 for the year. That is an 81% increase in visitation in just five years!

Park visitors with a ranger going through Lehman Caves.

Great Basin Ranger Corp

This Ranger Corp is a class act. High school students from Snake Valley and across the Great Basin are hired to work as American Conservation Experience Interns during the summer months. They provide cave tours and work the visitor center desks most days but they also get to explore other jobs in the park. The Ranger Corp helped the cave ecologist clean the cave entrance and exit tunnel and trays under the staircases of the lint,

dirt, hair and dander we leave behind in the cave. Sounds gross? The Ranger Corp loved it! They even saved a bag of lint to share with visitors on their cave tours providing a conservation message about how we impact the cave even when we are trying not to. They also went to the ancient bristlecone pine grove on Mount Washington to help apply pheromone treatments to trees to keep beetles from occupying the tree because the

pheromones tell the invading beetles the tree is already occupied. Ranger Corp also allows the park to learn from our local youth. Getting to know them, how they have grown up in this remote part of Nevada and Utah, and what it is like to live in the shadow of a National Park. It is a great give and take of work, information, and friendships that will strengthen our bonds to our community in the future.

Wilderness Medicine

Great Basin is going to be partnering with University of Nevada Reno (UNR) in a Wilderness Medicine Fellowship. This partnership will provide Great Basin with a board certified doctor to assist our staff in the busiest times of the year, while providing training to the UNR staff in incident management, the incident command system, and search and rescue techniques in the remote wilderness areas. Future plans include reaching out to the local community to bring Incident Management Training to the Park and local cooperators.

Park Trail Crew

The Trail Crew spent countless hours working on the Park's 62 miles of trails and, with the help of various Nevada Conservation Corp crews, accomplished a lot this year. Regular trail maintenance included felling hazard trees, removing fallen trees and rocks, and brushing. Additionally the Crew installed water-bars to control erosion, and installed new signage, including at distant locales like the Mill Site and Cabins near Johnson Lake. They also installed new trail benches, repaired some of the Park's picnic tables and informational kiosks, and installed six new bulletin boards in our Campground Kiosks. On days when the weather prohibited trail work, the crew assisted other employees with ongoing projects or work-orders, including addressing housing needs such as painting interiors, helping with plumbing, and repairing sheetrock, doors, and cabinets.

Volunteers

Our volunteer force was outstanding in 2018. We know volunteers are a huge help and their work is invaluable. From 2017 to 2018 our number of volunteer hours in interpretation and natural resources have almost doubled. In 2107, volunteers put in 2,707 hours of work. In 2018 they gave us 4,976 hours of their time. In total all volunteers donated 6,013 hours of their time to the park. All of those hours add-up; the in-kind service our volunteers provide would be equal to \$153,547.11 in salary.

So those are the numbers, but volunteers mean a lot more than that. They help bridge the gap in our services at visitor centers and

cave tours like MaryKay and Carol. They bring skills and experience that we might be lacking on staff like Tom and Edith and how to maintain our telescopes! Natural Resources uses volunteers to take on large scale tasks that require a lot of attention to safety, details, and protecting resources, like the Lint Camps and Bio-Blitz. And Carol and Jim, our campground hosts, dove into a job that they knew might some days require them to be of service 20 hours a day.

We have only just begun to use these talented individuals, couples, and groups to help us complete our work. They help energize our day with their enthusiasm and inspire with their generosity.

Bats In the Basin

Great Basin National Park's Southern Nevada Public Land Management Act funded project, "Can land managers prevent the 'inevitable collapse' of bats in the western US?", has just finished its second of five field seasons. The overarching goals of the project are to locate and protect important bat roosts, derive demographic information about local bat populations, and educate and engage the public in bat conservation. Data gathered will help managers both locally and regionally better mitigate the growing threats to bat populations and manage bat habitats.

What makes this project unique is its scale; the study area includes the valleys and mountain ranges adjacent to the park, and has interagency collaboration built into its framework. Before white nose syndrome (WNS) spread to Washington state in 2016, White Pine County, NV in which Great Basin NP is located, was ranked the 10th most susceptible county west of the Mississippi for WNS based on potential roost sites, bat species, and climate suitability (Ihlo 2013). Millard County, UT, and Tooele County, UT both border White Pine County and were ranked in the top 14 counties for



LEFT: Townsend's big-eared bat cluster. **RIGHT:** Releasing a Mexican free-tailed bat. PHOTOS BY JOSEPH DANIELSON.

susceptibility. As complex threats to bats continue to affect our landscape, we hope commensurate efforts like this SNPLMA project will provide managers the necessary tools to conserve and protect bats at the landscape-scale.

A main focus of our efforts has been in deploying passive integrated transponder (PIT) tag arrays at several major Townsend's big-eared bat (*Corynorhinus townsendii*) maternity roosts, such as the one in Lehman Caves. Bats are trapped as they exit the roost and injected with a 12 mm long PIT tag. A small computer and antenna then logs individuals as they enter and exit the roost. The dataset gathered will provide novel baseline information about the timing and fidelity of roost use by bats in and near the park, as well as important life history data like survival and recruitment. Similar arrays are on caves with Townsend's

roosts managed by the US Forest Service and Bureau of Land Management within White Pine County.

The park is also helping with a mark-recapture project studying Mexican free-tailed bats (*Tadarida brasiliensis*) that roost in a cave close to the western park boundary from May-October. This species migrates in the spring and fall. The continental-scale connections between their roosts is poorly understood. Over the last three years, the Nevada Department of Wildlife and partners have outfitted 30,000 bats with wing bands, which uniquely identify them as part of our Nevada roosting population. Migratory bats like Mexican free-tailed bats have been heavily impacted by wind-energy development; this project will better inform wind development and bat conservation as wind energy continues to expand across the West.

Coming in 2019!

NEW WINCHESTER RIFLE EXHIBIT

April/May 2019

Great Basin National Park Foundation, through a grant from The Fund for People in Parks, is working with the park to complete a new exhibit and permanent home for the Forgotten Winchester. The park Cultural Resources Program Manager, Eva Jensen, and Chief of Interpretation, Nichole Andler, have been working with a contractor to design the exhibit. Work on the exhibit design is nearing completion and fabrication and installation will take place in late April or early May 2019.

STRAWBERRY CREEK REOPENING

May 1, 2019

In preparation for opening Strawberry Creek to the public, the park will re-grade the parking area at the park boundary; fabricate and install an entrance sign; and re-design, fabricate and install orientation signs for the Strawberry Creek watershed. Orientation signs will include maps and text that reflect post-fire conditions, highlight fire as a natural process necessary to maintain desired habitat conditions, and changes to recreational opportunities in the area.

WHEELER PEAK CAMPGROUND

PARTIAL CLOSURE

Summer, 2019

Work will begin on improvements to the Wheeler Peak Campground. There will be partial closures in the campground. Check our website www.nps.gov/grba/planyourvisit/conditions for current closure information.

BAT BIO-BLITZ

August 20-22, 2019

Volunteer to help the park discover more about the bats that call the Great Basin home.



10TH ANNUAL ASTRONOMY FESTIVAL

September 26-28, 2019

This will be the 10th annual Astronomy Festival. There will be activities for kids, guest speakers, and night sky viewing through telescopes.

Thank you to Western National Parks Association for the layout and design of this document.



National Park Service
U.S. Department of the Interior

Great Basin National Park
Baker, NV
www.nps.gov/grba

